

# Effect of Cervical Lidocaine Gel for Pain Relief in Pipelle Endometrial Sampling

*Pipelle Endometriyal Örneklemeye Servikal Lidokain Jelin Ağrı Üzerine Etkisi*

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## ABSTRACT

**Objective:** To evaluate the efficacy of cervical lidocaine gel in reducing patient discomfort during Pipelle endometrial sampling.

**Materials and Methods:** From September 2012 to January 2013, 137 patients were evaluated with Pipelle endometrial biopsy. For group 1 (77 women), 2% lidocaine gel was applied to the cervical canal 3 min before endometrial sampling. For group 2 (60 women), a placebo gel was applied. The pain experienced by the patients during biopsy was evaluated using a 100 mm visual analog scale.

**Results:** The pain score was significantly lower during suction curettage (T3) in the group 1 than in the group 2. There was no significant difference between the groups in terms of pain score in other stages of the procedure ( $2.6 \pm 1.3$  and  $4.5 \pm 1.4$ ;  $p=0.03$ ).

**Conclusion:** Cervical 2% lidocaine gel is simple and effective for decreasing pain associated with Pipelle endometrial biopsy.

**Keywords:** Endometrial biopsy, lidocaine, pipelle

## ÖZ

**Amaç:** Pipelle endometrial örneklemeye yapılırken servikal lidokain jel kullanımının hastanın ağrısını azaltmaya yönelik etkinliğini değerlendirmek.

**Gereç ve Yöntem:** Eylül 2012 - Ocak 2013 tarihleri arasında, pipelle endometrium örneklemeye yapılan 137 hasta değerlendirildi. Endometrial örneklemeye bir dakika önce 77 kadının (Grup 1) servikal kanalına %2'lik lidokain jel uyguladık. 60 kadına (Grup 2) örneklemeye öncesi müdahalede bulunulmadı. Vizüel analog 100 mm skalasını kullanarak biopsi işleminde hastaların ağrısını değerlendirdik.

**Bulgular:** Lidokain uyguladığımız gruptaki ağrı skoru küretaj sırasında (T3) önemli derecede az saptandı. İşlemin diğer aşamalarındaki (T1, T2, T4) ağrı skoru gruplar arasında anlamlı fark göstermedi ( $2,6 \pm 1,3 / 4,5 \pm 1,4$   $p=0,03$ ).

**Sonuç:** Pipelle endometrial biopside servikal lidokain jel %2 kullanımı ağrının azalmasında basit ve etkili bir yöntemdir.

**Anahtar Kelimeler:** Endometrial biopsi, lidokain, pipelle

## Introduction

Approximately one-third of admissions to a gynecology clinic are because of abnormal uterine bleeding. The vast majority of patients include perimenopausal women [1, 2]. Making a diagnosis, planning a treatment, and discriminating dysfunctional etiologies from organic ones are of great importance. Dysfunctional causes require medical treatment; organic causes such as myoma, polyp, or endometrial cancer require surgical treatment. One of the most important stages for the discrimination is the evaluation of the endometrium.

Transvaginal ultrasonography is relatively useful as it enables the evaluation of the myometrium and adnexal pathologies together with the endometrium in women who have abnormal uterine bleeding. However, its efficacy is limited in the evaluation of endometrial pathologies (sensitivity, 89.4%; specificity, 71.4%) [3, 4]. Dilatation and curettage (D&C), described by Recaimer in 1843, has been accepted as the gold standard in the diagnosis of endometrial pathologies [5].

D&C enables one to obtain tissue samples and make a histological diagnosis. The disadvantages of the procedure include bleeding, infection, uterine perforation, and the need for anesthesia. It is not an easy procedure both for the doctor and patient as patients may have difficulties tolerating pain during the procedure. Therefore, less invasive, more economic, and easier procedures have been sought for defining endometrial pathologies [6].

A Pipelle is a soft and flexible endometrial suction curette. The Pipelle device may be well tolerated by patients, and sufficient samples may be obtained. Some patients may experience discomfort during tenaculum application and sampling despite all its advantages [7]. Nonsteroidal anti-inflammatory drugs, anesthetic gels applied to the cervix, and local anesthetics have been attempted before the procedure to prevent discomfort; however, a clear outcome could not be obtained regarding the benefit of these pre-procedural treatments.

This study aimed to investigate the effect of 2% lidocaine gel application to the cervical canal before Pipelle endometrial biopsy. Pain was assessed when holding the cervix with a tenaculum, when the cavity was accessed with the Pipelle, during curettage, and 10 min after completing the procedure.

**Table 1. Demographic characteristics of the patients and indications for endometrial sampling**

|                         | Lidocaine gel (n=77) | Control (n=60) |
|-------------------------|----------------------|----------------|
| Age                     | 44.1±3.5             | 43.9±3.3       |
| Parity                  |                      |                |
| Nulliparous             | 8                    | 7              |
| Multiparous             | 69                   | 53             |
| Uterus (cm)             | 7.1±1                | 6.9±2          |
| Indications             |                      |                |
| Irregular cycle         | 12                   | 10             |
| Menorrhagia             | 51                   | 43             |
| Intermenstrual bleeding | 9                    | 4              |
| Others                  | 6                    | 7              |
| Total                   | 77                   | 60             |

## Materials and Methods

This randomized, prospective, placebo-controlled study was conducted at the Gynecology and Obstetrics Clinic of İzmir Tepecik Research and Training Hospital between September 2012 and January 2013. A total of 137 patients who were admitted because of abnormal uterine bleeding and who underwent Pipelle endometrial biopsy were analyzed. Postmenopausal, pregnant women, women with an active vaginal infection or heart disease, those using an intra-uterine device, and those who underwent cervical polypectomy during the procedure were excluded. The study was initiated after obtaining the approval of the ethics committee from the Education Planning and Coordination Committee of the hospital. All patients were informed about the procedure during their outpatient clinic controls and their written informed consent was obtained.

Patients were divided into two groups with a simple randomization technique. Patients in Group 1 (n=77) were administered 2% lidocaine gel into the cervical canal 3 min before endometrial sampling; patients in Group 2 (n=60) were administered a placebo gel into the cervical canal 3 min before endometrial sampling.

Patients were taken to a lithotomy position and bimanual vaginal examination was done to evaluate uterine position. The cervix was observed by placing a speculum. The vagina was cleaned with 10% povidon-iodine. In Group 1, 1 cc of 2% lidocaine gel was applied to the region that would be held with the tenaculum, 2 cc gel on the end of the Pipelle was applied into cervical canal. After waiting 3 min, the cervix was held with a tenaculum and biopsy was performed with the Pipelle endometrial curette (Cooper surgical, Lake Forest, CA). The visual analog scale (pain decreased as getting close to 0 on the left and increased as getting close to 10 on the right) was explained by the gynecologist and current pain status was determined on the scale. Scoring was done when holding the cervix with the tenaculum (T1), when the cavity was accessed with the Pipelle (T2), during curettage (T3), and 10 min after the procedure (T4).

Vasovagal symptoms, bradycardia, hypotension, fatigue, sweating, nausea, and vomiting were evaluated concurrently. The SPSS 20.0 program was used for data analysis.

## Results

Patients in the group 1 (77 patients) were administered 2% lidocaine gel before undergoing Pipelle endometrial biopsy, whereas those in the group 2 (60 patients) were administered a placebo. Patients were blinded to the drug administered, but the operator knew to whom lidocaine or placebo gel was administered. No patients required cervical dilatation during the procedure. Age, parity, uterine size of patient, and indications for endometrial sampling were compared between the two groups (Table 1). No difference was found between the groups in terms of demographic characteristics.

Pain scores during the procedure are shown in Table 2. Pain was most severely experienced during curettage (T3) in both the groups. Some pain was also experienced when holding the cervix with the tenaculum. Pain experienced during curettage was significantly less in the group 1 than in the group 2 ( $p<0.05$ ). There was no significant difference between the groups in terms of pain scores during the other stages. No difference was observed between the groups in terms of vasovagal symptoms. There was no difference between nulliparous and multiparous patients in terms of pain scores after the procedure. The pain score was found to be mildly elevated in nulliparous patients during in-group comparisons. In the group 2, the mean pain score was 1.8 in nulliparous patients and 1.3 in multiparous patients; in the group 1, the scores were 1.7 and 1.2, respectively. There was no significant difference in the average pain score between the two groups.

## Discussion

Endometrial sampling is the most important stage of diagnosing uterine bleeding and menstrual irregularities. Although anesthesia is not usually required during sampling with a Pipelle, pain experienced during the procedure impairs the comfort of the doctor and patient. Patients are unwilling to undergo the procedure because of the potential discomfort and pain, resulting in delay in diagnosis. Many studies have been performed conducted to reduce pain during biopsy. In previous studies, intracervical lidocaine injection was observed to be beneficial; however, it caused pain, resulting in bradycardia and hypotension [8-10]. Wong et al. [11] showed that 2% lidocaine gel application to the cervix before hysteroscopy and endometrial sampling was ineffective. In another study, applying lido-

**Table 2. Pain scores in different stages of Pipelle endometrial biopsy**

| Pain scores (mean±SD)                         | Lidocaine gel (n=77) | Control (n=60) | p    |
|---|----------------------|----------------|------|
| Holding cervix with tenaculum (T1)            | 2.4±1.2              | 2.5±1.3        | 0.5  |
| Proceeding cannula in the cervical canal (T2) | 2±1.4                | 2.3±1.5        | 0.4  |
| During curettage (T3)                         | 2.6±1.3              | 4.5±1.4        | 0.03 |
| After curettage (T4)                          | 1.7±0.5              | 1.6±0.4        | 0.6  |
| SD: standard deviation                        |                      |                |      |

caine to the uterine cavity reduced pain during Pipelle endometrial biopsy [12]. In our study, we applied 2% lidocaine gel to the cervical canal before Pipelle endometrial sampling in 77 patients. We evaluated the pain experienced during Pipelle endometrial biopsy using a visual analog scale. The visual analog scale scores were similar in both the groups when holding the cervix with a tenaculum (T1), when proceeding with the biopsy (T2), and 10 min after the procedure (T4). Most pain was experienced during curettage (T3). Pain scores during curettage were found to be significantly less in the group 1 than in the group 2 ( $p=0.03$ ). Vacuum curettage was performed in 14 patients (10.2%; group 1, six patients; group 2, eight patients) whose Pipelle sampling material was inadequate for histological diagnosis. Tanriverdi and Barut [13], compared the results obtained with the Pipelle with those obtained with D&C and showed that they could obtain a sufficient sampling in only 79% of cases. They recommended the use of the Pipelle only in patients with minimum risk for endometrial cancer. We did not include patients with postmenopausal hemorrhage in the study; for these patients, we used D&C.

Endometrial sampling is the most important stage of diagnosing abnormal uterine bleeding and menstrual irregularities. The histopathological evaluation of the endometrium without discomfort is the main goal. In this study, cervical lidocaine gel as a local anesthetic appears to

be an effective method for reducing pain during Pipelle endometrial biopsy. After the procedure, a significant reduction was observed in the pain experienced during curettage. Cervical lidocaine gel is a simple and effective method for reducing pain experienced during Pipelle endometrial biopsy.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the ethics committee of İzmir Tepecik Training and Research Hospital.

**Informed Consent:** Written informed consent was obtained from patients who participated in this study.

**Author Contributions:** Concept - İ.K., M.A.; Design - E.T.; Supervision - Ö.E.Y.; Resources - S.Y.K.; Materials - İ.K.; Data Collection and/or Processing - M.A., S.Y.K.; Analysis and/or Interpretation - Ö.E.Y.; Literature Search; İ.K., E.T.; Writing Manuscript - İ.K.; Critical Review - İ.K., M.A.

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